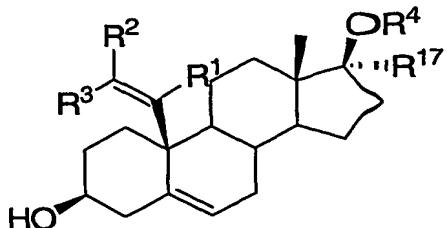


## WHAT IS CLAIMED IS:

1. A method of treating a disease in a mammal in need thereof by administering to the mammal a therapeutically effective amount of a compound of the formula:



5

wherein R<sup>1</sup> is hydrogen, halo, C<sub>(1-3)</sub> alkyl, CO<sub>2</sub>C<sub>(1-3)</sub>alkyl, or cyano;

R<sup>2</sup> is hydrogen, halo, C<sub>(1-3)</sub> alkyl, CO<sub>2</sub>C<sub>(1-3)</sub>alkyl, or cyano;

R<sup>3</sup> is hydrogen, halo, C<sub>(1-3)</sub> alkyl, CO<sub>2</sub>C<sub>(1-3)</sub>alkyl, or cyano;

R<sup>4</sup> is hydrogen or C<sub>(1-3)</sub> alkyl;

10 R<sup>17</sup> is hydrogen, C<sub>(1-5)</sub> alkyl, C<sub>(1-5)</sub> acyl, C<sub>(2-5)</sub> alkenyl, or C<sub>(2-5)</sub> alkynyl;

or a pharmaceutically acceptable salt or stereoisomer thereof;

wherein said disease is: bone loss, bone fractures, osteoporosis, metastatic bone disease, Paget's disease, periodontal disease, cartilage degeneration, endometriosis, uterine fibroid disease, hot flashes, cardiovascular disease, impairment of cognitive functioning, cerebral degenerative disorders, restenosis, 15 gynecomastia, vascular smooth muscle cell proliferation, obesity, incontinence, anxiety, depression, perimenopausal depression, post-partum depression, premenstrual syndrome, manic depression, anxiety, dementia, obsessive compulsive behavior, attention deficit disorder, sleep disorders, irritability, impulsivity, anger management, multiple sclerosis and Parkinson's disease, inflammation, inflammatory bowel disease, sexual dysfunction, hypertension, retinal degeneration or an estrogen dependent cancer.

20

2. The method of Claim 1 wherein

R<sup>1</sup> is hydrogen, halo, methyl or cyano;

R<sup>2</sup> is hydrogen, halo, methyl or cyano;

R<sup>3</sup> is hydrogen, halo, methyl or cyano;

25 R<sup>4</sup> is hydrogen or methyl;

R<sup>17</sup> is hydrogen, C<sub>(1-3)</sub> alkyl, C<sub>(2-3)</sub> acyl, C<sub>(2-3)</sub> alkenyl, or C<sub>(2-3)</sub> alkynyl.

3. The method of Claim 1 wherein the disease is hot flashes.

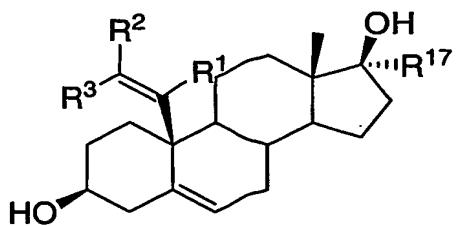
30 4. The method of Claim 1 wherein the disease is depression.

5. The method of Claim 1 where in the disease is an estrogen dependent cancer.

6. The method of Claim 1 where in the compound is selected from

- 5 19-nor-10 $\beta$ -vinyl-3 $\beta$ ,17 $\beta$ -androst-5-ene diol;
- 19-nor-10 $\beta$ -vinyl-3 $\beta$ - hydroxy -17 $\beta$ - methoxy -androst-5-ene
- 17 $\alpha$ -ethynyl-19-nor-10 $\beta$ -vinyl-3 $\beta$ ,17 $\beta$ -androst-5-ene diol;
- 17 $\alpha$ -vinyl-19-nor-10 $\beta$ -vinyl-3 $\beta$ ,17 $\beta$ -androst-5-ene diol;
- 17 $\alpha$ -methyl-19-nor-10 $\beta$ -vinyl-3 $\beta$ ,17 $\beta$ -androst-5-ene diol;
- 10 19-nor-10 $\beta$ -(1-methyl-vinyl)-3 $\beta$ ,17 $\beta$ -androst-5-ene diol;
- 19-nor-10 $\beta$ -(cis-2-methyl-vinyl)-3 $\beta$ ,17 $\beta$ -androst-5-ene diol;
- 19-nor-10 $\beta$ -(trans-2-methyl-vinyl)-3 $\beta$ ,17 $\beta$ -androst-5-ene diol;
- 19-nor-10 $\beta$ -(1-ethyl-vinyl)-3 $\beta$ ,17 $\beta$ -androst-5-ene diol;
- 19-nor-10 $\beta$ -(cis-2-ethyl-vinyl)-3 $\beta$ ,17 $\beta$ -androst-5-ene diol;
- 15 19-nor-10 $\beta$ -(trans-2-ethyl-vinyl)-3 $\beta$ ,17 $\beta$ -androst-5-ene diol;
- 19-nor-10 $\beta$ -(1-chloro-vinyl)-3 $\beta$ ,17 $\beta$ -androst-5-ene diol;
- 19-nor-10 $\beta$ -(cis-2-chloro-vinyl)-3 $\beta$ ,17 $\beta$ -androst-5-ene diol;
- 19-nor-10 $\beta$ -(trans-2-chloro-vinyl)-3 $\beta$ ,17 $\beta$ -androst-5-ene diol;
- 19-nor-10 $\beta$ -(1-fluoro-vinyl)-3 $\beta$ ,17 $\beta$ -androst-5-ene diol ;
- 20 19-nor-10 $\beta$ -(cis-2-fluoro-vinyl)-3 $\beta$ ,17 $\beta$ -androst-5-ene diol;
- 19-nor-10 $\beta$ -(trans-2-fluoro-vinyl)-3 $\beta$ ,17 $\beta$ -androst-5-ene diol;
- 19-nor-10 $\beta$ -(2, 2-difluoro-vinyl)-3 $\beta$ ,17 $\beta$ -androst-5-ene diol;
- 19-nor-10 $\beta$ -(trifluorovinyl)-3 $\beta$ ,17 $\beta$ -androst-5-ene diol;
- 25 17 $\alpha$ -ethynyl-19-nor-10 $\beta$ -trifluorovinyl-3 $\beta$ ,17 $\beta$ -androst-5-ene diol; or a pharmaceutically acceptable salt or stereoisomer thereof.

7. A pharmaceutical composition comprising a compound of the formula



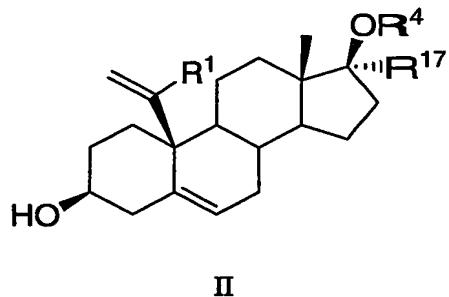
wherein R1 is hydrogen, halo, C<sub>(1-3)</sub> alkyl, CO<sub>2</sub>C<sub>(1-3)</sub>alkyl, or cyano;

30 R2 is hydrogen, halo, C<sub>(1-3)</sub> alkyl, CO<sub>2</sub>C<sub>(1-3)</sub>alkyl, or cyano;

R3 is hydrogen, halo, C<sub>(1-3)</sub> alkyl, CO<sub>2</sub>C<sub>(1-3)</sub>alkyl, or cyano;  
 R17 is hydrogen, C<sub>(1-5)</sub> alkyl, C<sub>(1-5)</sub> acyl, C<sub>(2-5)</sub> alkenyl, or C<sub>(2-5)</sub> alkynyl;  
 or a pharmaceutically acceptable salt or stereoisomer thereof;  
 and another agent selected from: an organic bisphosphonate; a cathepsin K inhibitor; an estrogen; an  
 5 estrogen receptor modulator; an androgen receptor modulator; an inhibitor of osteoclast proton ATPase;  
 an inhibitor of HMG-CoA reductase; an integrin receptor antagonist; an osteoblast anabolic agent;  
 calcitonin; Vitamin D; a synthetic Vitamin D analogue; or a selective serotonin reuptake inhibitor; an  
 aromatase inhibitor; or a pharmaceutically acceptable salt or mixture thereof.

10        8.        The method of Claim 1 further comprising another agent selected from: an  
             organic bisphosphonate; a cathepsin K inhibitor; an estrogen; an estrogen receptor modulator; an  
             androgen receptor modulator; an inhibitor of osteoclast proton ATPase; an inhibitor of HMG-CoA  
             reductase; an integrin receptor antagonist; an osteoblast anabolic agent; calcitonin; Vitamin D; a  
             synthetic Vitamin D analogue; or a selective serotonin reuptake inhibitor; an aromatase inhibitor; or a  
 15        pharmaceutically acceptable salt or mixture thereof.

9.        A compound of formula II



20        wherein R<sup>1</sup> is hydrogen, halo, C<sub>(1-3)</sub> alkyl, or cyano;  
             R<sup>4</sup> is hydrogen, or C<sub>(1-3)</sub> alkyl;  
             R<sup>17</sup> is hydrogen, C<sub>(1-5)</sub> alkyl, C<sub>(2-5)</sub> alkenyl, or C<sub>(2-5)</sub> alkynyl;  
             with the proviso that R<sup>1</sup> and R<sup>4</sup> are not both hydrogen  
             or a pharmaceutically acceptable salt or stereoisomer thereof.

25        10.        A pharmaceutical composition comprising a compound of Claim 9.